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C3
forming a metal layer on the polysilicon structure; and
heating the metal layer and the polysilicon structure.

12. (Amended) A method of making an emitter contact for a bipolar transistor, the method comprising:

forming a polysilicon structure on an active region of the transistor, the polysilicon structure including:

a diffusion barrier layer on the active region; and
a polysilicon layer on the diffusion barrier layer; and

[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer.

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15. (Amended) The method of claim 12 wherein [substituting] cross-diffusing metal [for] and the polysilicon layer comprises [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer.

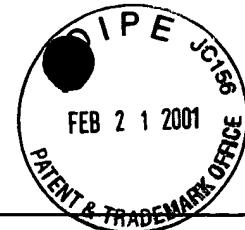
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16. (Amended) The method of claim 12 wherein [substituting] cross-diffusing metal [for] and at least a portion of the second polysilicon layer, comprises:

depositing metal on the polysilicon layer; and
heating the deposited metal and the polysilicon layer

20. (Amended) A method of making a metal contact for a bipolar transistor, the method comprising:

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forming a conductive diffusion barrier over an emitter region position of the transistor;
forming a polysilicon structure on the conductive diffusion barrier; and
[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure to form a metal contact having a lower-most surface overlying the emitter region position of the transistor.

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23. (Amended) A method of making a bipolar transistor having self-aligned base contacts and self-aligned metal emitter contact, the method comprising:



forming first and second polysilicon base contacts on a semiconductive layer, the contacts spaced apart to define an active region in the semiconductive layer; outdiffusing dopant from the first and second base contacts into the semiconductive layer to form extrinsic base regions aligned with the base contacts; implanting an intrinsic base region in the active region; forming a doped diffusion barrier layer on the intrinsic base region; forming a doped polysilicon layer on the doped diffusion barrier layer; forming an emitter region self-aligned with the doped diffusion barrier layer by outdiffusing dopant from the doped diffusion barrier layer into the intrinsic base region; and [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer after forming the emitter region, thereby forming a metal emitter contact self-aligned with the emitter region.

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24. (Amended) The method of claim 23,

wherein [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure includes [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer.

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26. (Amended) The method of claim 24 wherein [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer comprises:

depositing metal on the polysilicon layer; and heating at least the deposited metal and the polysilicon layer to a predetermined temperature.

28. (Amended) A method of reducing emitter resistance of a bipolar transistor, the method comprising:

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forming a bipolar transistor structure having a polysilicon emitter contact electrically coupled to an emitter region of the transistor structure; [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon emitter

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PRELIMINARY AMENDMENT

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contact [without shorting the emitter region of the transistor].

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32. (Amended) A method of making a bipolar transistor having self-aligned base contacts and self-aligned metal emitter contact, the method comprising:

forming first and second polysilicon base contacts on a semiconductive layer, the contacts spaced apart to define an active region in the semiconductive layer;
outdiffusing dopant from the first and second base contacts into the semiconductive layer to form extrinsic base regions aligned with the base contacts;
implanting an intrinsic base region in the active region;
forming a doped polysilicon structure on the intrinsic base region, wherein the polysilicon structure includes:
a doped diffusion barrier layer on the intrinsic base region; and
a polysilicon layer on the doped diffusion barrier layer; and
forming an emitter region self-aligned with the doped polysilicon structure by outdiffusing dopant from the doped polysilicon structure into the intrinsic base region; and
[substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer after forming the emitter region, thereby forming a metal emitter contact self-aligned with the emitter region.

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33. (Amended) A method of making a metal emitter contact for an emitter region position of a bipolar transistor, the method comprising:

forming a diffusion barrier layer over the emitter region position of a semiconductive substrate;
forming a polysilicon layer on the diffusion barrier layer and over the emitter region position; and
[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer to produce the metal emitter contact, the metal emitter contact electrically coupled to the emitter region through the diffusion barrier layer.

35. (Amended) A method of making an emitter contact for an emitter region position of a bipolar transistor, the method comprising:

forming a polysilicon structure over an emitter region position of a semiconductive substrate, the substrate having a surface at the emitter region position; and [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure to produce a metal emitter contact have a surface confronting the surface of the substrate.

39. (Amended) A method of making an emitter contact for an emitter region of a bipolar transistor, the method comprising:

forming a polysilicon structure on over an emitter region position; and [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure to produce a metal contact, the metal contact not serving as contact to a base region of the bipolar transistor.